

Amendments to the Specification:

Please add the following paragraph to the beginning of page 1, after the title:

Priority Claim

This application is the national stage of International Application No. PCT/GB2004/001060, filed March 12, 2004, which claims benefit to United Kingdom Patent Application No. GB0305976.3, filed March 14, 2003, the specification of which is hereby incorporated herein by reference in its entirety.

Please replace page 1, paragraph 2, lines 11-21, with the following amended paragraph:

An example of a commercially available haemostatic locking clip is the Hem-o-lok ligating clip, available from Weck Closure Systems, USA (~~web-site: www.weckclosure.com~~). This clip takes the form of a hinged plastic jaw with cooperating snap-fit closure formations on the end of each of the two jaw members. The clip is applied onto a blood vessel via a simple pliers-like applicator which closes the open jaw members together across the blood vessel, until the jaw members snap together. The clip has no inherent self closing bias, and the application mechanism is crude in that each clip must be loaded manually and individually on the applicator, in the open condition. To actuate the loaded applicator, a surgeon must make available his whole dominant hand, because of the pliers-grip hand action required.

Please replace page 2, paragraph 1, lines 4-12, with the following amended paragraph:

WO-A-00/35355, the disclosure of which is incorporated herein by reference, describes a surgical apparatus and method for occluding or encircling a body passageway, e.g., for haemostasis. The method involves offering a surgical clip formed from a temperature-dependent shape-memory material, to a blood vessel or other body passageway in a first clip configuration at a temperature below body temperature, and allowing the temperature of the clip to rise by the proximity of the body passageway to the clip. The rise in temperature assists the clip to deform into a second, occluding, configuration in which the clip is closed around the body passageway.

Please replace page 5, paragraph 1, lines 1-15, with the following amended paragraph:

It is preferred that the or each limb extends from the base portion of the clip behind the reaction portion of the clip and initially turns backwards, i.e., away from the forward facing direction of the reaction surface, and that the or each limb has at least one further turn (“elbow”) in its length, after which it extends in the forwards direction to cause the free end of the limb to extend forwardly of the reaction surface. The turns may suitably be smooth curves. Such a configuration has the advantage that the stress applied to open the limbs against the resilient restoring (closing) force of the limbs is spread over a relatively long limb length, so reducing the risk of failure or loss of resilience. Furthermore, by providing for a relatively long limb length, useful leverage or mechanical advantage can be obtained in the closing of the limb towards the reaction surface. The majority of clip closure takes place at the elbow section of the limb. However, when the clip closes around a body passageway there is some straightening of the other turns, as additional length is transferred from such other sections into the gripping part of the limb, so providing the leverage referred to above.

Please replace page 6, paragraph 2, lines 15-24, with the following amended paragraph:

The clip may suitably be manufactured by photochemical etching or laser cutting from a sheet of the resilient material. A suitable sheet material will be a flat, annealed, surface pickled, Nitinol sheet of 800 μ m thickness, available from SMA, Inc. of San Jose, USA (~~web site: www.sma-inc.com~~) under Alloy Code S (approx. 55.8 wt% nickel; balance titanium). Such a sheet has an Active A_f temperature of around 15°C within normal Nitinol tolerance. Laser cutting is preferred. The use of an industrial laser has been found to be advantageous, in that no extraneous metals are added to the surface composition of the clip by this process. The laser cutting technique provides the required degree of accuracy and does not adversely affect the superelasticity of the Nitinol.

Please replace pages 6 and 7, paragraph 3, lines 26-33 and page 7, lines 1-2, with the following amended paragraph:

The clip is preferably obtained initially as a planar blank with the limb(s) arranged in an intermediate condition, i.e., with the limb(s) neither fully opened, nor too closed to interfere with

reaction portion. The intermediate condition should be sufficiently close to the first (open) condition that the first condition of the clip can be obtained by stressing the limb(s) outwardly by less than the maximum recoverable strain of the resilient material used. In the case of Nitinol, its maximum recoverable strain is 6 to 8%, which means in practice that the limb(s) of the blank as cut should lie sufficiently close to its/their orientation in the first condition of the clip that the first condition can be achieved by moving the limb(s) outwardly by an angular deformation of less than about 8°.

Please replace page 7, paragraph 3, lines 12-16, with the following amended paragraph:

In stage two, the or each limb is turned inwards into the closed condition, e.g., using a jig. In addition, the or each limb is slightly off-set above or below the plane of the blank, to pass in front of, or behind, the reaction portion. The formed clip is then constrained and heat treated to permanently set the closed shape (shape set annealed).

Please replace page 9, paragraph 6, lines 31-32, with the following amended paragraph:

[Figure] Fig. 1 shows a surgical clip in the first condition applied to a body passageway, looking along the line of the body passageway;

Please replace page 10, paragraph 1, lines 1-3, with the following amended paragraph:

[Figure] Fig. 2 shows the surgical clip of Fig. 1 omitting the body passageway for clarity, and in dotted lines the resting or intermediate condition of the clip prior to stressing to achieve the first condition;

Please replace page 10, paragraph 2, lines 5-6, with the following amended paragraph:

[Figure] Fig. 3 shows the surgical clip and body passageway in the closed condition (occluded body passageway);

Please replace paragraph 3, page 10, lines 8-9, with the following amended paragraph:

[Figure] Fig. 4 shows in perspective the surgical clip and body passageway of Fig. 1 from front right; and

Please replace paragraph 4, page 10, lines 11-12, with the following amended paragraph:

[Figure] Fig. 5 shows the surgical clip in a fully closed condition achievable without a body passageway.

Please replace paragraph 5, page 10, lines 16-17, with the following amended paragraph:

Referring to the drawings, there is shown a surgical clip 1 for occluding a body passageway 2, e.g., for haemostasis.

Please replace paragraph 3, page 11, lines 22-29, with the following amended paragraph:

As shown particularly in Fig. 4, one limb 4a lies to one side of the edge of the reaction surface 10, i.e., slightly to the left of the vertical plane of the central body portion 3 of the clip as viewed, and the other limb 4b lies to the other side of the edge of the reaction surface 10, i.e., slightly to the right of the plane of the central body portion 3 of the clip as viewed. In addition, the central reaction portion 9a, 9b is rotated (off-set) anticlockwise from the neutral, planar, laser cut condition, to further facilitate movement of each of the limbs 4a, 4b to pass unhindered to its respective side of the reaction surface 10.